

Chronic Wasting Disease Surveillance and Monitoring Plan
for Benton Lake National Wildlife Refuge Complex

Prepared by:

Bob Johnson
U.S. Fish and Wildlife Service
Benton Lake NWR
922 Bootlegger Trail
Great Falls, MT 59404

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Submitted by: _____ Date: _____
Dave Gillund, Project Leader

Approved by: _____ Date: _____
Thomas J. Roffe, Chief, Wildlife Health

Approved by: _____ Date: _____
Steve Berendzen, Refuge Supervisor

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Chronic Wasting Disease Surveillance and Contingency Plan for Benton Lake National Wildlife Refuge Complex

Introduction

Chronic Wasting Disease (CWD) is a transmissible spongiform encephalopathy of North American deer and elk that is a progressive, fatal, neurological disease. The cause of CWD is unknown, but is associated with malformed prion proteins (USGS 2000). CWD was initially described in captive deer in Colorado, but later was identified in both wild and captive deer and elk. The disease is currently confirmed in free-ranging cervids in 8 states and 1 province (Fig. 1). In Montana CWD has only been found in one captive elk herd near Philipsburg (Montana Dept. of Livestock 2004). Last year (2003) over 2,000 samples were collected in Montana from free-ranging elk and deer, all of which tested negative (N. Anderson, pers. comm.). Even so, it has been found in free-ranging cervids in adjacent states, including South Dakota and Wyoming and the Canadian Province of Saskatchewan (National Wildlife Health Center 2004) within 60 miles of the Montana border.

Currently, all 48 contiguous states have some form of CWD surveillance plan in place and most are developing response plans. While CWD affects species generally managed by state wildlife departments, the US Fish and Wildlife Service (Service) has management responsibilities for wildlife on Service lands. In addition, the ecological relationships of species on refuges and hatcheries mean that CWD in cervids may impact natural resources directly under Service jurisdiction (e.g. endangered species such as wolves and grizzly bear). The Service recognizes the states have lead responsibility for CWD. Resolving CWD issues involving Service lands will require close coordination with state wildlife agencies. Given this, it is important that the Service and Benton Lake NWR (Refuge) prepare for the potential that this disease will reach Refuge lands.

This plan is established to provide a framework for surveillance, monitoring and disease response at the Refuge or WMD in collaboration with the Montana Department of Fish, Wildlife and Parks (MTFWP). Surveillance and response to CWD may involve active management of habitat, public use and animals, including lethal collection of cervid species.

Refuge Background

The Benton Lake Wetland Management District (WMD) has 22 Waterfowl Production Areas (WPA's) totaling 16,000+ acres and encompasses 20,000 square miles. WPA's are located in the shortgrass prairie, the Sweetgrass Hills, along the East Front of the Rockies and in the Blackfoot Valley, west of the Continental Divide. Benton Lake Refuge was established in 1929 as a "refuge and breeding ground for birds". Located on the western edge of the northern Great Plains, 50 miles east of the Rocky Mountains and 12 miles north of Great Falls, Montana, this 12,383 acre refuge is comprised of 6700 acres of shortgrass prairie and 5600 acres of wetlands. The total deer population (mule and

white-tailed deer) on the Refuge, which is closed to big game hunting, is less than 100 animals. An occasional elk is seen on the refuge.

Risk Assessment

The Benton Lake complex has a relatively low to moderate risk of significant CWD impact based on:

- 1) Relatively low numbers of deer on the Refuge and no elk.
- 2) The closest game farm is 25 miles from the Refuge
- 3) The Powell county WPA's that have the highest deer and elk population are located 50 miles from the nearest game farm.
- 4) No elk/deer have been relocated on the Refuge, WPA's or adjacent areas within the past 5 years
- 5) The elk/deer do mix with other cervids off refuge lands.
- 6) Elk/deer movements are estimated to be > 10 miles
- 7) There is no record of elk/deer disease or mortality events.

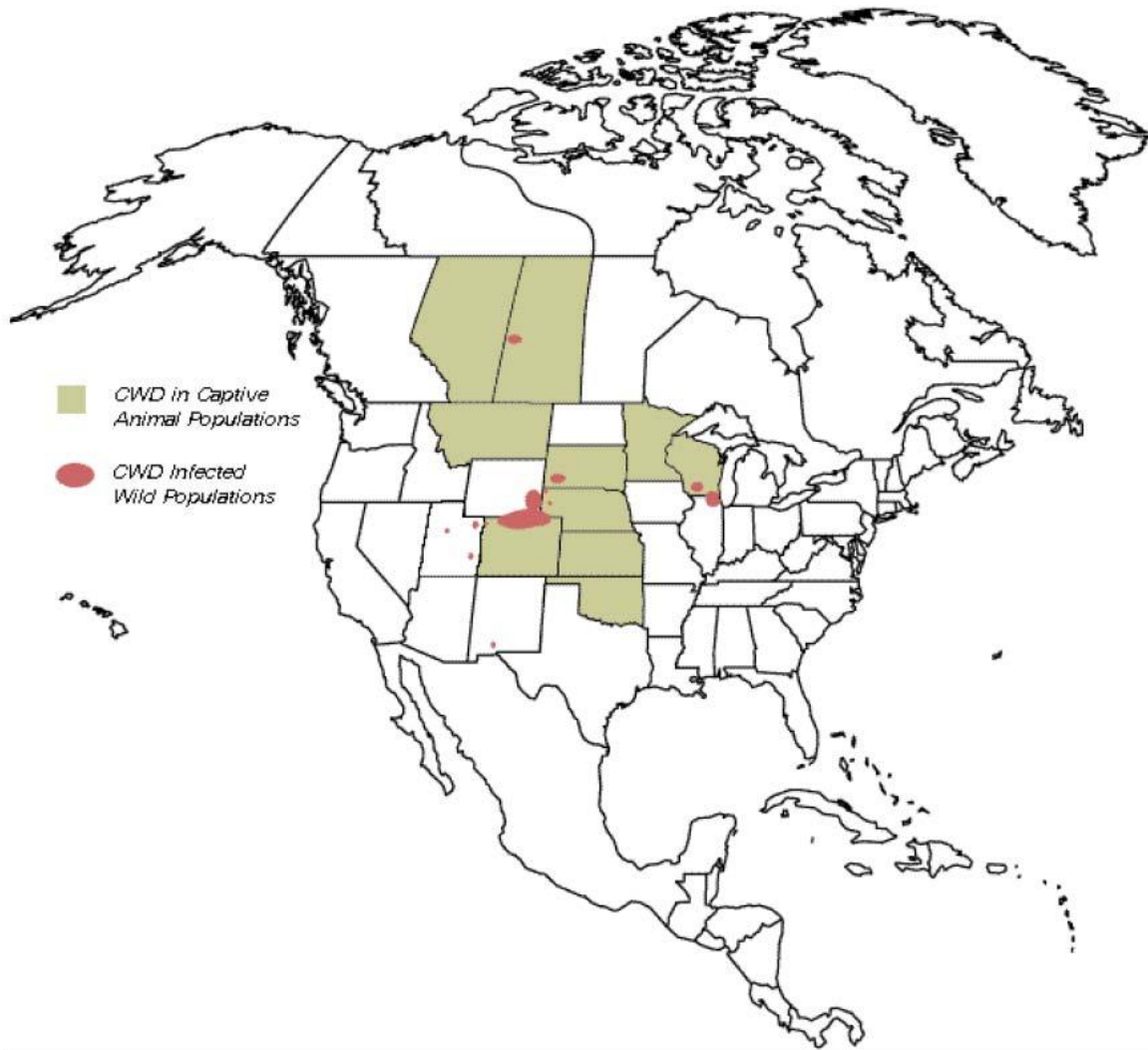


Figure 1. States and provinces where CWD has been detected in free-ranging and captive elk and deer.

Policy

The Regional Director of Region 6 has provided guidance for CWD management and surveillance to field units within the Region. The Refuge Manual (7 RM 17) states that it is “Service policy to prevent or to control wildlife diseases on Refuges wherever practical or possible” and the “Service will take a leadership role...(for) fostering cooperative (wildlife disease) control activities.”

Surveillance Goals and Procedures

Our CWD planning and management goals and objectives for Benton Lake complex include:

Management Goal: In collaboration with Montana Department of Fish, Wildlife

and Parks, prevent the establishment of CWD in wild cervids that use the Refuge or WPAs

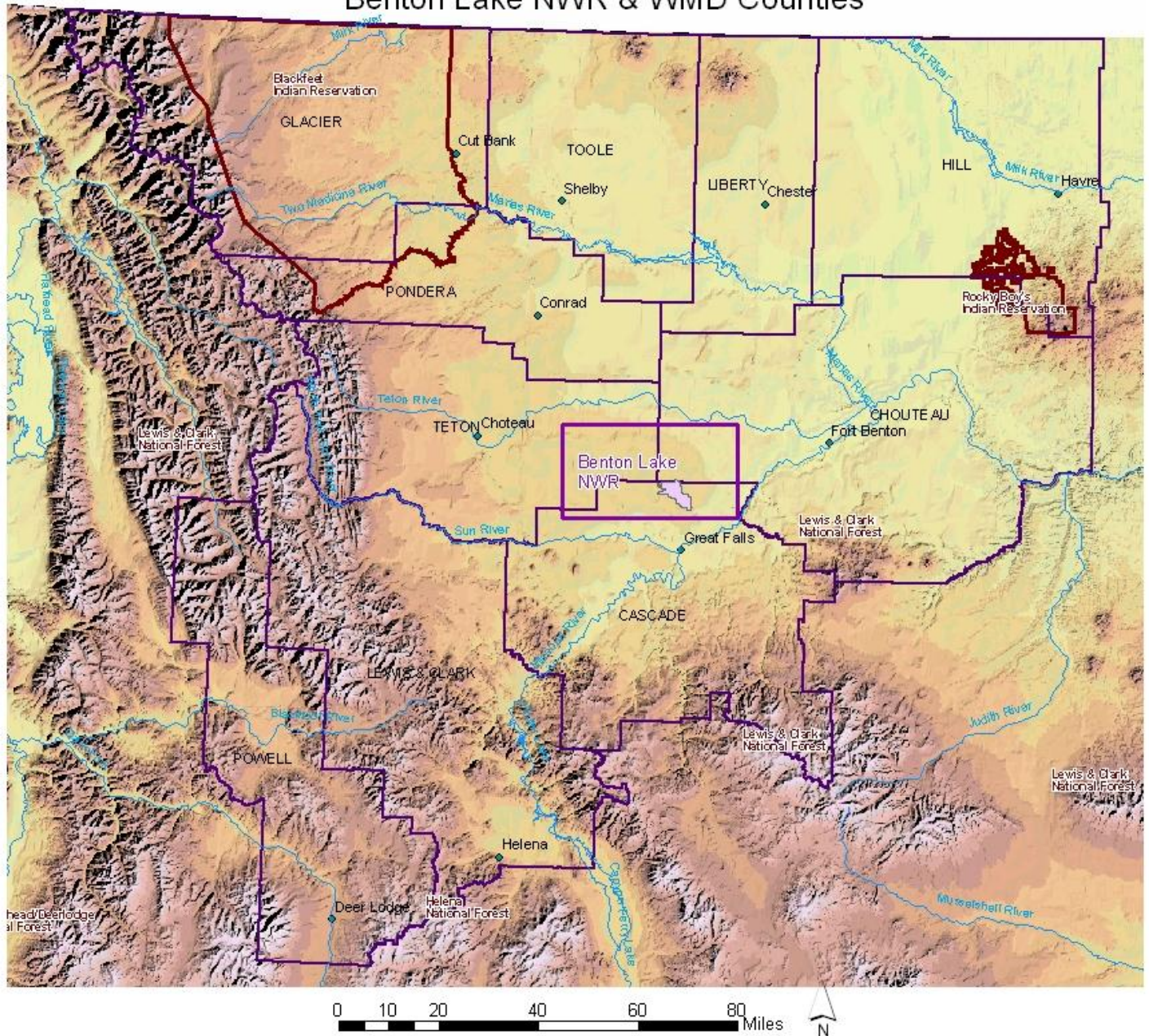
Surveillance Goal: Early detection of CWD to increase the probability of eliminating or controlling the spread of the disease.

Surveillance Objectives: To determine the status of CWD in deer and elk on the Refuge and in the WMD and estimate the likelihood that CWD is absent.

Chronic Wasting Disease is not known to exist in free-ranging cervids in Montana or Idaho, but it has been detected in Saskatchewan and Alberta. Several WPAs in Toole County are located within five miles of the Canadian border. Due to the remote location (more than 120 miles from Refuge Headquarters) these WPAs are not part of routine CWD monitoring. WMD staff will conduct surveillance for sick or dead ungulates whenever they visit these units.

If deer or elk are observed exhibiting clinical signs consistent with CWD (emaciation, drooling, staggering, indifferent to surroundings) these animals will be collected and the heads removed and submitted to the MTFWP lab in Bozeman. If freshly dead animals are located the heads from these animals will be collected and submitted to the Bozeman lab as well.

Benton Lake NWR & WMD Counties



Surveillance Objectives: To determine the status of CWD in deer and elk on the Refuge and in the WMD and estimate the likelihood that CWD is absent.

If any deer or elk are observed that exhibit symptoms of CWD (Emaciation, Drooling, Staggering) these animals will be collected and the heads removed and submitted to the MTFWP lab in Bozeman. If freshly dead animals are located the heads from these animals will be collected and submitted to the Bozeman lab as well.

1. Communication and Coordination

A. Refuge Communication-

The Refuge Project Leader will serve as the Benton Lake Complex point of contact for all surveillance and management operations. As such, the Complex PL will be responsible for organizing Refuge on-site resources, coordinating with cooperating agencies and entities, executing the agreed upon CWD responses and notifying appropriate within and outside the Service. The Complex PL will also be responsible for media contacts and dispensing information about CWD control efforts on the Refuge. However, questions concerning policy, finances, and personnel issues that cannot be adequately answered at the field level will be referred to the Regional External Affairs Office (EAO). Because our plan relies on passive surveillance observations of cervids by staff members is a critical factor in our surveillance success. Any staff member that observes an injured or symptomatic animal should immediately inform the PL so the animal and/or samples can be collected in a timely manner.

Appendix A lists primary contacts with MTFWP, Non-Governmental Organizations, other Federal agencies and adjacent private landowners. Additions to this list will be made as necessary to keep neighbors, groups or agencies informed about the status of CWD on the Refuge.

B. Communication with Hunters-

Hunters in the WMD will be informed about Refuge surveillance goals, the status of CWD in Montana, facts concerning CWD transmission, and the potential risk involved. Appropriate signage and fact sheets will be developed and placed on WPAs with big-game hunting pressure.

2. Regulatory and Policy Compliance

If an injured or suspect animal is to be collected outside established state hunting regulations, the appropriate MTFWP warden will be contacted to inform them of the situation and actions of the Refuge.

3. Human and Wildlife Safety

A. *Human Safety-*

All Refuge personnel involved in sample collection will be trained in basic sanitary precautions for collecting, handling, and sampling animals or when working with potentially infective materials. The following supplies will be purchased and used by all Refuge personnel involved in all CWD management efforts:

- a. Disposable tyvek coveralls
- b. Rubber boots suitable for scrubbing and disinfection
- c. Disposable plastic boot covers
- d. Plastic or metal buckets
- e. Roccal disinfectant, or Chlorox 5-10% solution
- f. Boot scrub brushes
- g. Latex or nitrile gloves
- h. Plastic trash bags
- i. Two gallon jugs for water in the field
- j. Necropsy knives
- k. Brain spoons
- l. Plastic disposable forceps
- m. Refrigerator and freezer dedicated to potentially biohazardous materials for sample storage

Persons collecting or handling cervids should wear protective clothing to reduce the risk of contamination and transport of pathogens. Collectors should wear coveralls, washable boots and gloves. Disposable refuse (e.g. tyvek coveralls, gloves, boot covers, etc) will be burned on site. Reusable coveralls will be bagged on site and washed. Boots and non-disposable tools will be washed in chlorox or roccal. Below are additional precautions for collecting brain specimens:

Take extra care to avoid or minimize the use of tools and equipment likely to cause injury such as cuts, abrasions and puncture wounds. Where use of such equipment is unavoidable, wear suitable Personal Protective Equipment (PPE) and clothing.

Use face and respiratory protection: a well-fitted respiratory mask and face shield or goggles to protect the eyes and respiratory system from infective droplets or tissue particles.

Wear disposable gloves while handling tissue samples.

Medical emergency services are available in the event someone is injured while capturing a deer/elk. Depending on the severity of the injury, the Benefis Life Flight ambulance or

ground ambulance can be contacted (please see Appendix I and the Refuge Safety Plan for contact information and procedures).

B. *Wildlife Safety*

The safety of non-suspect cervids will have to be considered because inadvertent harm could occur. The suspect animal should be shot, preferably in the caudal neck, as soon as safe, to ensure minimal likelihood of wounding or affecting other animals.

Sampling Methodology

Using appropriate safety and disinfection protocols above, refuge staff will remove heads from cervids collected for CWD surveillance by cutting soft tissues with a knife, then sawing through the vertebral column four inches below the base of the skull. Heads should be double bagged and properly labeled. Heads collected from Refuge sites will include the identification: BNLNWR - date collected - sample number in sequential order (e.g., BNLNWR - 11/12/04-01). Samples collected from specific WPA's will be identified with a numbering system unique to that WPA. Heads or samples collected from elk and deer will be stored in the Refuge freezer until transported or processed. Finally, a tooth should be removed for aging purposes because there is evidence CWD is more prevalent in certain age classes (Mike Miller, personal communication). Teeth should be labeled with the same field identity as the head, and "tooth" placed on the label. Once samples are collected, the MTFWP wildlife lab in Bozeman, MT should be contacted to schedule a transfer date.

Medical emergency services are available in the event someone is injured while capturing a deer/elk. Depending on the severity of the injury, the Benefis Life Flight ambulance or ground ambulance can be contacted (please see Appendix I and the Refuge Safety Plan for contact information and procedures).

4. Handling and Disposing of Carcasses

Although all the facts of transmission are not known, recent data confirm that contaminated environments and infected carcasses serve as sources of transmission (Miller 2004). All carcasses will be buried on site (Refuge or WPA). The Refuge manager will determine the burial location.

5. Data Management and Record Keeping

All data concerning surveillance will be stored in a computer database, a backup copy will be made, and an additional copy provided to the state. Information to be recorded for animals collected will include: date of collection, personnel involved, general location of collection, type of collection (road kill, taken by CWD personnel during cull operations, targeted as symptomatic, etc.), species, gender, estimated age, list of samples collected, distribution of samples and the final results of the tests. Copies will be kept at the Refuge and sent to the Regional Wildlife Veterinarian, and to the MTFWP Wildlife

Health Laboratory if, for some reason, the Wildlife Health Laboratory did not process the samples for laboratory testing. Locations of CWD positive animals will be mapped and stored as a data layer in Arcview Geographic Information Systems (GIS) (Environmental System Research Institute, Inc. Redlands, CA).

Contingency Procedures

1. Communication and Coordination

The Project Leader will be responsible for organizing and coordinating all CWD management operations on-site. If CWD is detected the Project Leader will immediately contact Neil Anderson, MTFWP, to coordinate any response. The Project Leader will also immediately contact the Service External Affairs office to aid in communicating with the public and preparing press releases if necessary. Finally, the Project Leader will contact all adjacent public and private land owners (Appendix I.). The Refuge will provide any available on-site resources for collection and disposal of animals as outlined below. Refuge staff will coordinate with Montana Fish, Wildlife and Parks biologists and wardens for management of cervid populations throughout the ten county wetland management district. Sample processing will be done according to the cooperative agreement developed with MTFWP.

2. Regulatory and Policy Compliance

The Project Leader will contact Jay Frederick of the Ecological Services FWS Office in Helena, MT concerning all Section 7 activities. If animals are to be collected specifically for CWD monitoring (i.e., samples collected outside of established hunting seasons), the effects will have to be considered. If it is determined that an intra-Service NEPA consultation is needed the Project Leader will compile all the required documentation, including Section 7 and biological assessments as well as Environmental Assessments (EA) or Environmental Impact Statements (EIS). Many of the management actions may fall under categorical exclusions and therefore be exempt from the EA or EIS process. All NEPA reference material can be accessed in the Refuge files. The Project Leader will document all determinations of the intra-Service NEPA consultation.

The Montana USFWS Ecological Service office will have to be contacted to guarantee all regulations are met concerning the effects of animal disposal. All carcasses will be buried on the Refuge and will have to be in compliance with all water quality regulations.

A wide variety of laws, regulations, executive orders and policy dictate how National Wildlife Refuges are administered.

National Wildlife Refuge System Mission: "To administer a network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife

Refuge System Improvement Act of 1997, Public Law 105-57). Alternative proposed actions in the Montana CWD Plan, if adopted by the Benton Lake Complex, would not be in conflict with the NWRS mission.

Key concepts and guidance for the system are included in the National Wildlife Refuge System Administration Act of 1966, The Refuge Recreation Act of 1962, Title 50 of the Code of Federal Regulations, the Fish and Wildlife Service Manual, Executive Order 12996 (March 23, 1996) and, most recently, the National Wildlife Refuge System Improvement Act of 1997.

The National Wildlife Refuge System Administration Act of 1996 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 USC 668dd-668ee. (Refuge Administration Act): Defines the National Wildlife Refuge System and authorizes the Secretary to permit any use of a refuge provided such use is compatible with the major purposes for which the refuge was established. The Refuge Improvement Act clearly defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation and photography, environmental education and interpretation); establishes a formal process for determining compatibility; established the responsibilities of the Secretary of the Interior for managing and protecting the System; and requires the preparation and implementation of a Comprehensive Conservation Plan for each refuge by the year 2012. This Act amended portions of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1996. This plan is in compliance with the National Wildlife Refuge System Act of 1966, as amended.

Other controlling legislation includes:

National Environmental Policy Act of 1969 (40 CFR 1500): Requires all Federal agencies to examine the impacts upon the environment that their actions might have, to incorporate the best available environmental information, and the use of public participation in the planning and implementation of all actions. All Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documentation to facilitate sound environmental decision making. NEPA requires the disclosure of the environmental impacts of any major Federal action that affects in a significant way the quality of the human environment. Certain Federal actions, for example, some research and surveillance, are exempt from NEPA review. Should actions be considered for implementation on the Benton Lake complex that have significant environmental consequences beyond the effects of current wildlife and habitat management, an environmental assessment or impact statement would need to be prepared.

Refuge Recreation Act of 1962, as amended: Allows the use of refuges for recreation when such uses are compatible with the refuge's primary purpose and when sufficient funds are available to manage the uses. This Plan is in compliance with the Refuge Recreation Act.

Currently, the CWD management goals of the Refuge and MTFWP are the same. The State of Montana Chronic Wasting Disease Action Plan draft is scheduled for completion during the winter of 2004-2005. This Montana Plan will be written in accordance with NEPA and Montana Environmental Policy Act (MEPA) regulations. By way of this plan, the Benton Lake Complex Project Leader has determined that actions needed to address the spread of Chronic Wasting Disease are compatible with the purpose of the Refuge.

3. Human and Wildlife Safety

A. Human Safety-

Human safety is the number one concern when dealing with dead or suspect animals. At this time CWD is not known to be transmissible to humans, however, basic sanitary precautions are useful to prevent exposure to other pathogens. Sanitary precautions should be taken whenever dealing with animals or contaminated materials. The following safety materials will be stored in the Refuge shop and should be used when handling any dead deer.

- a. coveralls (washable or disposable)
- b. boots that can be washed and disinfected or disposable booties to cover shoes
- c. bucket and disinfectant (10% Clorox: 90% water)
- d. boot scrub brush
- e. disposable gloves
- f. dust mask
- g. eye protection

B. Wildlife Safety-

Early in the progression of the disease, CWD infected animals do not display any clinical signs. As signs develop, they can be very subtle and easily missed. The decision of which, and how many, animals should be collected depends on surveillance and management goals for the state as a whole. The Service manages relatively small, isolated, discontinuous land masses. Response to CWD must be at the larger landscape level, thus individual refuges should not be attempting to manage CWD independently of the state. CWD prevalence, and other considerations will determine the most appropriate management steps, and will be conducted on Service lands in coordination with State of Montana CWD management goals and methods.

4. Handling and Disposal of Carcasses and Samples

CWD negative animals will be disposed of in the refuge botulism pit. CWD positive animals will be buried on the Refuge at a site chosen by the manager.

5. Data Management and Record Keeping

The Project Leader will designate a staff member to collect all field and laboratory data for any samples collected from animals on the Refuge. Information to be recorded for animals collected will include: date of collection, personnel involved, general location of collection, type of collection (road kill, taken by CWD personnel during cull operations, targeted as symptomatic, etc.), species, gender, estimated age, list of samples collected, distribution of samples and the final results of the tests. The assigned person will also map and store all location data in a GIS layer. The data will be stored on an assigned computer and backup copies stored on CD and filed in the Refuge library. A copy of all the data will also be provided to the Service's Regional Wildlife Veterinarian, Neil Anderson of Montana FWP and the USGS National Wildlife Health Center. The assigned person will also summarize and report all data for analysis by the State or USGS.

References Cited

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Appendix I. Tables

Table 1. Adjacent land owners contact numbers and web site information locations

Name or Organization	Contact Information
Benefis Mercy Flight	800-972-4000
Ewing, Richard (landowner)	406-463-2305
Suek, Helen (landowner)	406-727-4857
Burgmeier, John (landowner)	406-463-2522
White, Fred (landowner)	406-452-6520
Shane, Marc (landowner)	406-452-9065
Lee, Ron (landowner)	406-463-2596
Great Falls Tribune	406-791-1444
Aderhold, Mike, Montana FWP	406-454-5840
Missoulain	406-523-5200
Montana Dept. of Livestock website	http://www.liv.state.mt.us
MTFWPLab- Neil Anderson	406-994-6358
MTFWPCWD website	http://www.fwp.state.mt.us
USFWS Regional Biologist-Wayne King	303-236-8102
USFWS Regional Chief, Wildlife Health - Tom Roffe	406-994-5789
USFWS MT Ecological Services	406-449-5225
USFWS Ecological Services - NEPA	303-236-7400
USFWS External Affairs	303-236-4508
USGS Wildlife Health website	http://www.nwhc.usgs.gov

Table 2. Equipment available at Benton Lake NWR for CWD surveillance and disposal.

Equipment	Use	Location
Pick up	to haul carcasses	headquarters
Rifle/ammunition	to dispose of animals	Refuge office
Back Hoe	carcass burial	headquarters
Front end loader	carcass burial	headquarters

Table 3. Montana Game Wardens, Duty Stations and Phone Numbers

Warden	Duty Station	Phone Number
Gary Benson	Great Falls	454-5850
Danny Burns	Deer Lodge	542-5500
Jeff Campbell	Lincoln	542-5500
Larry Davis	Augusta	454-5840
Josh Doniak	Helena	495-3264
Rod Duty	Conrad	271-7033
Tom Flowers	Choteau	466-5631
Kelly Friede	Great Falls	454-5847
Bryan Golie	Cascade	454-5840
Wendy Kamm	Fort Benton	454-5840
Ryan Linder	Havre	265-6177
Levi Ostberg	Helena	495-3260
Mike Ottman	Helena	495-3271
Shane Reno	Havre	265-6177
Jason Snyder	Great Falls	454-5865
Steve Vinnedge	Great Falls	454-5849

